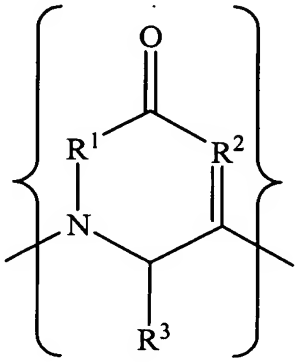
WHAT IS CLAIMED IS:

1. A peptide analog comprising a peptide in which at least one amino acid, but less than all amino acids, is replaced by an azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

R^3 is H or an amino acid side chain,

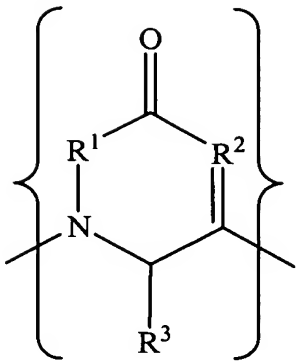
such that in at least one such azacyclohexenone group:

when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog.

2. A peptide analog comprising a peptide in which at least one amino acid, but less than all amino acids, is replaced by an azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog.

3. The peptide analog of claims **1** or **2** in which R^1 is CH_2 and R^2 is N.

4. The peptide analog of claims **1** or **2** in which R^1 is NH and R^2 is CH.

5. The peptide analog of claims **1** or **2** in which R^1 is NH and R^2 is N.

6. The peptide analog of claims **1** or **2** in which R^1 is CH_2 and R^2 is CH.

7. The peptide analog of claims **1** or **2** in which said azacyclohexenone group is an L-stereoisomer relative to R^3 when R^3 is an amino acid side chain.

8. The peptide analog of claims **1** or **2** in which said amino acid side chain is a side chain of a natural amino acid.

9. The peptide analog of claims **1** or **2** in which said amino acid side chain is a side chain of an unnatural amino acid.

10. The peptide analog of claims **1** or **2** in which said amino acid side chain is a member selected from the group consisting of C_1-C_6 alkyl, C_1-C_6 alkyl interrupted

by -O-, C_1-C_6 alkyl interrupted by -S-, hydroxy-(C_1-C_6 alkyl), carboxy-(C_1-C_6 alkyl), amino-(C_1-C_6 alkyl), guanidino-(C_1-C_6 alkyl), carbamoyl-(C_1-C_6 alkyl), mercapto-(C_1-C_6 alkyl), indolyl-(C_1-C_3 alkyl), phenyl-(C_1-C_3 alkyl), hydroxyphenyl-(C_1-C_6 alkyl), halophenyl-(C_1-C_6 alkyl), imidazolyl-(C_1-C_6 alkyl), phenyl, and sulfoximino-(C_1-C_6 alkyl).

11. The peptide analog of claims **1** or **2** in which said amino acid side chain is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy-(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino-(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

12. The peptide analog of claims **1** or **2** in which R^1 is CH_2, R^2 is N, and said amino acid side chain is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy-(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino-(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

13. The peptide analog of claims **1** or **2** in which the amino acids of said peptide analog are from 2 to 200 in number and said azacyclohexenone groups are from 1 to 100 in number.

14. The peptide analog of claims **1** or **2** in which the amino acids of said peptide analog are from 2 to 200 in number, said azacyclohexenone groups are from 1 to 100 in number, and the number ratio of said azacyclohexenone groups to amino acids is from 1:10 to 10:1.

15. The peptide analog of claims **1** or **2** in which the amino acids of said peptide analog are from 2 to 100 in number and said azacyclohexenone groups are from 1 to 50 in number.

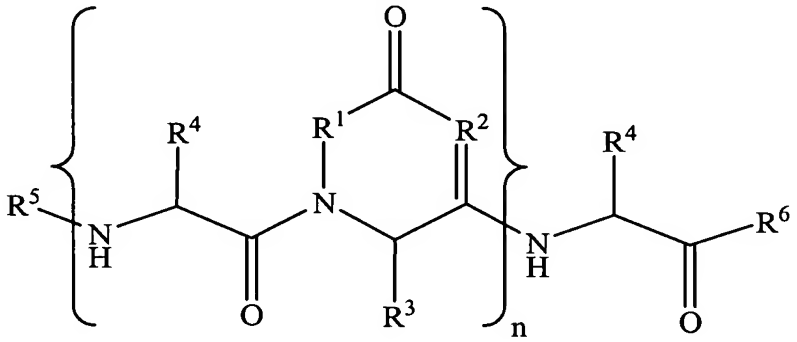
16. The peptide analog of claims **1** or **2** in which the amino acids of said peptide analog are from 2 to 100 in number, said azacyclohexenone groups are from 1 to 50 in number, and the number ratio of said azacyclohexenone groups to amino acids is from 1:10 to 10:1.

17. The peptide analog of claims **1** or **2** in which all remaining amino acids in said peptide analog are a combination of natural and unnatural amino acids.

18. The peptide analog of claims **1** or **2** in which all remaining amino acids in said peptide analog are natural amino acids.

19. The peptide analog of claims **1** or **2** in which R^1 is CH_2, R^2 is N, and R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy-(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino-(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl), and all remaining amino acids in said peptide analog are natural amino acids.

20. A peptide analog having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N,

R^3 is H or an amino acid side chain,

such that in at least one such azacyclohexenone group:

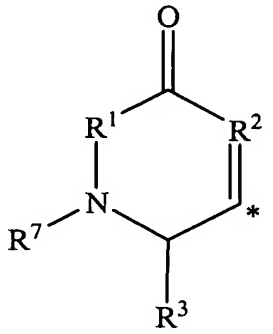
when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

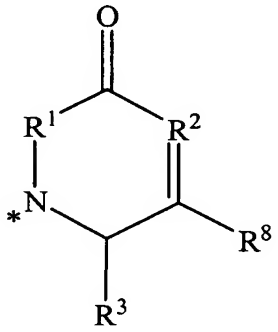
the R^4's are the same or different and each R^4 is either H or an amino acid side chain,

R^5 is a member selected from the group consisting of peptide chain terminating groups and



in which R^7 is a member selected from the group consisting of H, alkyl, acyl, carbamoyl, and alkoxycarbamoyl, and * denotes the site of attachment,

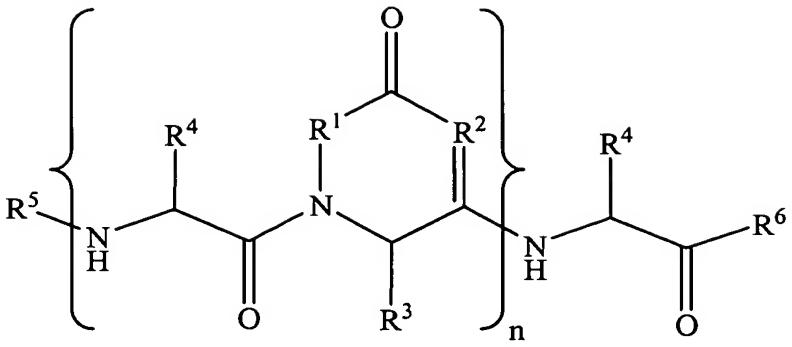
R^6 is a member selected from the group consisting of peptide chain terminating groups and



in which R^8 is a member selected from the group consisting of hydroxyl, alkoxy, alkylamino, dialkylamino, and arylamino, and * denotes the site of attachment, and

n is at least 2.

21. A peptide analog having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N,

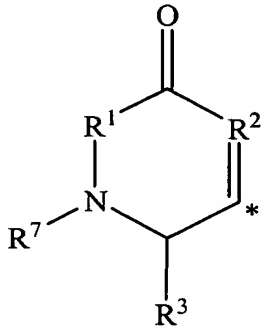
when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

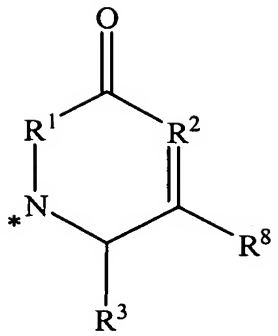
the R^4's are the same or different and each R^4 is either H or an amino acid side chain,

R^5 is a member selected from the group consisting of peptide chain terminating groups and



in which R^7 is a member selected from the group consisting of H, alkyl, acyl, carbamoyl, and alkoxycarbamoyl, and * denotes the site of attachment,

R^6 is a member selected from the group consisting of peptide chain terminating groups and



in which R^8 is a member selected from the group consisting of hydroxyl, alkoxy, alkylamino, dialkylamino, and arylamino, and * denotes the site of attachment, and

n is at least 2.

22. The peptide analog of claim **21** in which R^1 is CH_2 and R^2 is N.

23. The peptide analog of claim **21** in which R^1 is NH and R^2 is CH.

24. The peptide analog of claim **21** in which R^1 is NH and R^2 is N.

25. The peptide analog of claim **21** in which R^1 is CH_2 and R^2 is CH.

26. The peptide analog of claim **21** in which said peptide analog is an L-stereoisomer relative to R^3 when R^3 is an amino acid side chain

27. The peptide analog of claim **21** in which all R^3's are side chains of natural amino acids.

28. The peptide analog of claim **21** in which at least one R^3 is a side chain of a natural amino acid.

29. The peptide analog of claim **21** in which each R^4 is either H or a side chain of a natural amino acid.

30. The peptide analog of claim **21** in which at least one R^4 is either H or a side chain of a natural amino acid.

31. The peptide analog of claim **21** in which all R^3's and all R^4's are members selected from the group consisting of H, C_1-C_6 alkyl, C_1-C_6 alkyl interrupted by -O-, C_1-C_6 alkyl interrupted by -S-, hydroxy-(C_1-C_6 alkyl), carboxy-(C_1-C_6 alkyl), amino-

(C_1-C_6 alkyl), guanidino-(C_1-C_6 alkyl), carbamoyl-(C_1-C_6 alkyl), mercapto-(C_1-C_6 alkyl), indolyl-(C_1-C_3 alkyl), phenyl-(C_1-C_3 alkyl), hydroxyphenyl-(C_1-C_6 alkyl), halophenyl-(C_1-C_6 alkyl), imidazolyl-(C_1-C_6 alkyl), phenyl, and sulfoximino-(C_1-C_6 alkyl).

32. The peptide analog of claim **21** in which all R^3's and all R^4's are members selected from the group consisting of H, C_1-C_4 alkyl, hydroxy -(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino -(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

33. The peptide analog of claim **21** in which R^1 is CH_2, R^2 is N, and all R^3's and all R^4's are members selected from the group consisting of H, C_1-C_4 alkyl, hydroxy -(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino -(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

34. The peptide analog of claim **21** in which the R^4's are a combination comprising side chains of natural and unnatural amino acids.

35. The peptide analog of claim **21** in which each R^4 is either H or a side chain of a natural amino acid.

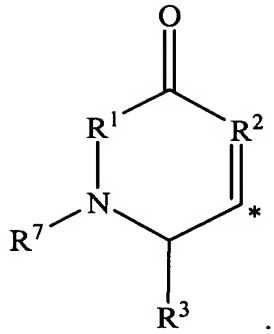
36. The peptide analog of claim **21** in which all remaining amino acids in said peptide analog are a combination comprising natural and unnatural amino acids.

37. The peptide analog of claim **21** in which all remaining amino acids in said peptide analog are natural amino acids.

38. The peptide analog of claim **21** in which R^5 is a member selected from the group consisting of H, alkyl, acyl, carbamoyl, and alkoxycarbonyl.

39. The peptide analog of claim **21** in which R^5 is acetyl.

40. The peptide analog of claim **21** in which R^5 is



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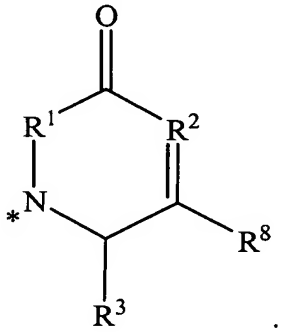
41. The peptide analog of claim **21** in which R^6 is a member selected from the group consisting of hydroxyl, alkoxy, alkylamino, dialkylamino, and arylamino.

42. The peptide analog of claim **21** in which R^6 is a member selected from the group consisting of hydroxyl and methylamino.

43. The peptide analog of claim **21** in which R^6 is



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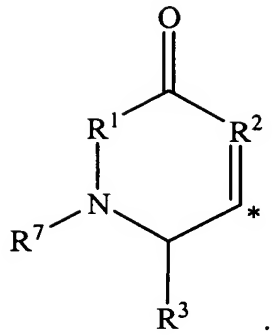
44. The peptide analog of claim **21** in which n is 2 to 100.

45. The peptide analog of claim **21** in which n is 2 to 50.

46. The peptide analog of claim **21** in which n is 2 to 5.

47. The peptide analog of claim **33** in which R^5 is a member selected from the group consisting of H, alkyl, acyl, carbamoyl, and alkoxycarbonyl, and R^6 is a member selected from the group consisting of hydroxyl, alkoxy, alkylamino, dialkylamino, and arylamino.

48. The peptide analog of claim **33** in which R^5 is



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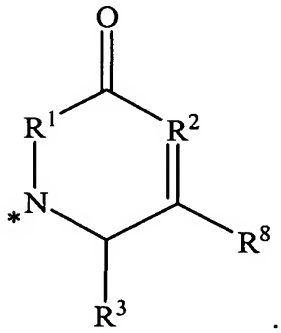
49. The peptide analog of claim **33** in which R^6 is



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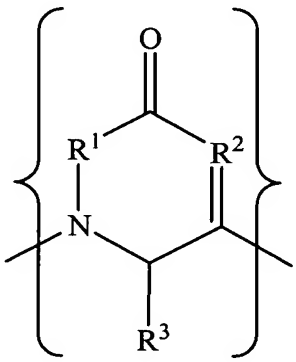
50. A peptide analog comprising a first segment consisting of a first sequence of amino acids joined by amide bonds and a second segment consisting of a second sequence of amino acids joined by amide bonds, in which at least one amino acid, but less than all amino acids, of said second segment is replaced by an azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

R^3 is H or an amino acid side chain,

such that in at least one such azacyclohexenone group:

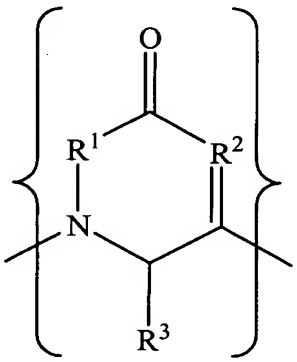
when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

said first and second segments joined by a covalent linkage that permits said first and second segments to enter into a β-sheet-like interaction with each other or with a third sequence of amino acids joined by amide bonds.

51. A peptide analog comprising a first segment consisting of a first sequence of amino acids joined by amide bonds and a second segment consisting of a second sequence of amino acids joined by amide bonds, in which at least one amino acid, but less than all amino acids, of said second segment is replaced by an azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

said first and second segments joined by a covalent linkage that permits said first and second segments to enter into a β-sheet-like interaction with each other or with a third sequence of amino acids joined by amide bonds.

52. The peptide analog of claim **50** in which R^1 is CH_2 and R^2 is N.

53. The peptide analog of claim **50** in which R^1 is NH and R^2 is CH.

54. The peptide analog of claim **50** in which R^1 is NH and R^2 is N.

55. The peptide analog of claim **50** in which R^1 is CH_2 and R^2 is CH.

56. The peptide analog of claim **50** in which said peptide analog is an L-stereoisomer relative to R^3 when R^3 is an amino acid side chain

57. The peptide analog of claim **50** in which all R^3's are side chains of natural amino acids.

58. The peptide analog of claim **50** in which at least one R^3 is a side chain of a natural amino acid.

59. The peptide analog of claim **50** in which all R^3's are members selected from the group consisting of C_1-C_6 alkyl, C_1-C_6 alkyl interrupted by -O-, C_1-C_6 alkyl interrupted by -S-, hydroxy -(C_1-C_6 alkyl), carboxy-(C_1-C_6 alkyl), amino-(C_1-C_6 alkyl), guanidino -(C_1-C_6 alkyl), carbamoyl-(C_1-C_6 alkyl), mercapto-(C_1-C_6 alkyl), indolyl-(C_1-C_3 alkyl), phenyl-(C_1-C_3 alkyl), hydroxyphenyl-(C_1-C_6 alkyl), halophenyl-(C_1-C_6 alkyl), imidazolyl-(C_1-C_6 alkyl), phenyl, and sulfoximino-(C_1-C_6 alkyl).

60. The peptide analog of claim **50** in which all R^3's are members selected from the group consisting of C_1-C_4 alkyl, hydroxy -(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino -(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

61. The peptide analog of claim **50** in which R^1 is CH_2, R^2 is N, and all R^3's are members selected from the group consisting of C_1-C_4 alkyl, hydroxy -(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino -(C_2-C_4 alkyl), carbamoyl-(C_1-C_2

alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

62. The peptide analog of claim **50** in which the amino acids in said first segment are a combination of natural and unnatural amino acids.

63. The peptide analog of claim **50** in which the amino acids in said first segment are natural amino acids.

64. The peptide analog of claim **50** in which the remaining amino acids in said second segment are a combination of natural and unnatural amino acids.

65. The peptide analog of claim **50** in which the remaining amino acids in said second segment are natural amino acids.

66. The peptide analog of claim **50** in which said second segment consists of an amino acid sequence in which two or more non-adjacent amino acids are replaced by azacyclohexenone groups of said formula.

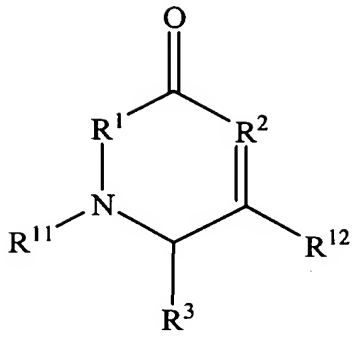
67. The peptide analog of claim **50** in which, in at least a portion of said second segment, every second amino acid is replaced by azacyclohexenone groups of said formula.

68. The peptide analog of claim **50** in which said first segment contains from 3 to 200 amino acids and in said second segment the total number of amino acids and azacyclohexenone groups is from 3 to 200.

69. The peptide analog of claim **50** in which said first segment contains from 3 to 20 amino acids and in said second segment the total number of amino acids and azacyclohexenone groups is from 3 to 20.

70. The peptide analog of claim **50** in which said covalent linkage is a member selected from the group consisting of D-Pro-Ala and Asn-Gly.

71. A compound having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N,

when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain,

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

R^{11} is a nitrogen protecting group, and

R^{12} is a member selected from the group consisting of OH, SH, and activated leaving groups.

72. The compound of claim **71** in which R^1 is CH_2 and R^2 is N.

73. The compound of claim **71** in which R^1 is NH and R^2 is CH.

74. The compound of claim **71** in which R^1 is NH and R^2 is N.

75. The compound of claim **71** in which R^1 is CH_2 and R^2 is CH.

76. The compound of claim **71** in which said compound is an L-stereoisomer relative to R^3 when R^3 is an amino acid side chain

77. The compound of claim **71** in which R^3 is a side chain of a natural amino acid.

78. The compound of claim **71** in which R^3 is a member selected from the group consisting of C_1-C_6 alkyl, C_1-C_6 alkyl interrupted by -O-, C_1-C_6 alkyl interrupted by -S-, hydroxy-(C_1-C_6 alkyl), carboxy-(C_1-C_6 alkyl), amino-(C_1-C_6 alkyl), guanidino-(C_1-C_6 alkyl), carbamoyl-(C_1-C_6 alkyl), mercapto-(C_1-C_6 alkyl), (C_1-C_3 alkyl)thio-(C_1-C_3 alkyl), indolyl-(C_1-C_3 alkyl), phenyl-(C_1-C_3 alkyl), hydroxyphenyl-(C_1-C_6 alkyl), halophenyl-(C_1-C_6 alkyl), imidazolyl-(C_1-C_6 alkyl), phenyl, and sulfoximino-(C_1-C_6 alkyl).

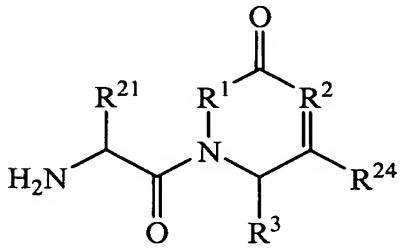
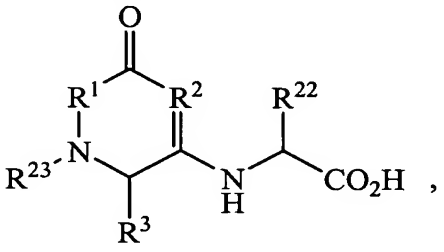
79. The compound of claim **71** in which R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy-(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino-(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

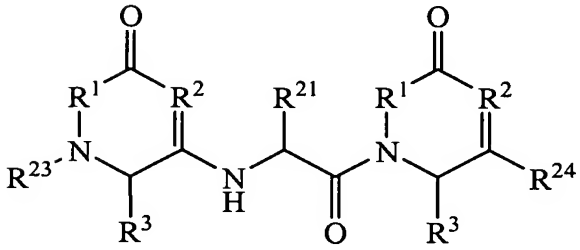
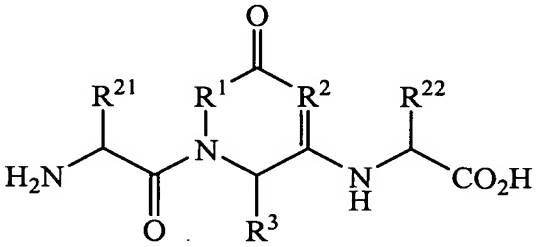
80. The compound of claim **71** in which R^1 is CH_2, R^2 is N, and R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy-(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino-(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

81. The compound of claim **80** in which R^{12} is OH.

82. The compound of claim **80** in which R^{12} is an activated leaving group.

83. A compound having a formula selected from the group consisting of


,

,


, and


in which:

R^1 is CH_2 or NH,

R^2 is CH or N,

when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain,

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain, and

when R^1, R^2, and R^3 occur twice in said formula, each R^1 is either the same or different, each R^2 is either the same or different, and each R^3 is either the same or different,

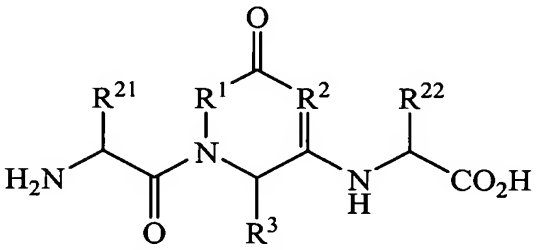
R^{21} is H or an amino acid side chain;

R^{22} is H or an amino acid side chain;

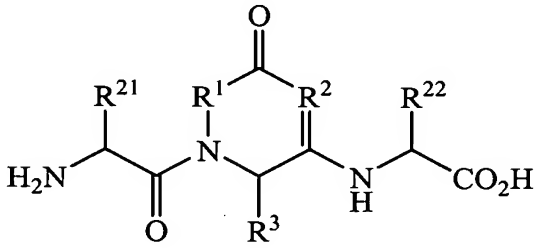
R^{23} is a member selected from the group consisting of H and amine protecting groups; and

R^{24} is a member selected from the group consisting of an activated leaving group, OR^{25} where R^{25} is H or an oxygen-protecting group, SR^{26} where R^{26} is H or an alkyl or aryl group, and $N(R^{27})_2$, where the R^{27}'s are members independently selected from the group consisting of H, alkyl, and aryl;

and amine-protected analogs of those of said group that terminate in H_2N–, carboxy-protected analogs of those of said group that terminate in $-CO_2H$, carboxy-activated analogs of those of said group that terminate in $-CO_2H$, amine-protected and carboxy-protected analogs of



and amine-protected and carboxy-activated analogs of



84. The compound of claim **83** in which R^1 is CH_2 and R^2 is N.

85. The compound of claim **83** in which R^1 is NH and R^2 is CH.

86. The compound of claim **83** in which R^1 is NH and R^2 is N.

87. The compound of claim **83** in which R^1 is CH_2 and R^2 is CH.

88. The compound of claim **83** in which said compound is an L-stereoisomer relative to R^3 when R^3 is an amino acid side chain.

89. The compound of claim **83** in which R^3 is a side chain of a natural amino acid of a natural amino acid.

90. The compound of claim **83** in which R^3 is a side chain of an unnatural amino acid of a natural amino acid.

91. The compound of claim **83** in which R^3 is a side chain of a natural amino acid and R^{21} and R^{22} are independently H or side chains of natural amino acids.

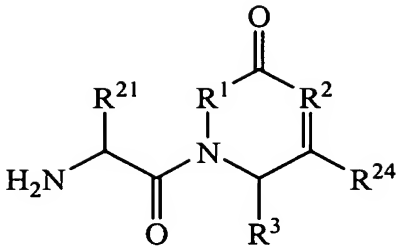
92. The compound of claim **83** in which at least one of R^3, R^{21}, and R^{22} is a side chain of a natural amino acid.

93. The compound of claim **83** in which R^3, R^{21}, and R^{22} are members selected from the group consisting of H, C_1-C_6 alkyl, C_1-C_6 alkyl interrupted by -O-, C_1-C_6 alkyl interrupted by -S-, hydroxy-(C_1-C_6 alkyl), carboxy-(C_1-C_6 alkyl), amino-(C_1-C_6 alkyl), guanidino-(C_1-C_6 alkyl), carbamoyl-(C_1-C_6 alkyl), mercapto-(C_1-C_6 alkyl), indolyl-(C_1-C_3 alkyl), phenyl-(C_1-C_3 alkyl), hydroxyphenyl-(C_1-C_6 alkyl), halophenyl-(C_1-C_6 alkyl), imidazolyl-(C_1-C_6 alkyl), phenyl, and sulfoximino-(C_1-C_6 alkyl).

94. The compound of claim **83** in which R^3, R^{21}, and R^{22} are members selected from the group consisting of H, C_1-C_4 alkyl, hydroxy-(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino-(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

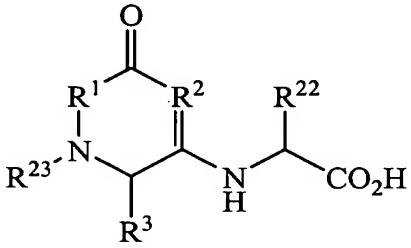
95. The compound of claim **83** in which R^1 is CH_2, R^2 is N, and R^3, R^{21}, and R^{22} are members selected from the group consisting of H, C_1-C_4 alkyl, hydroxy-(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino-(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

96. The compound of claim **83** which is a member selected from the group consisting of compounds of the formula



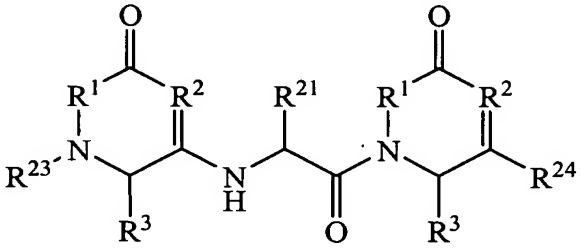
in which R^{24} is a member selected from the group consisting of an activated leaving group, OR^{25} where R^{25} is H or an oxygen-protecting group, SR^{26} where R^{26} is H or an alkyl or aryl group, or $NR^{27}{}_2$ where the R^{27}'s are members independently selected from the group consisting of H, alkyl, or aryl; and amine-protected analogs of said compounds.

97. The compound of claim **83** which is a member selected from the group consisting of compounds of the formula



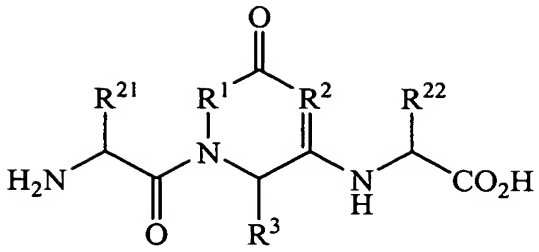
in which R^{23} is an amine protecting group, and carboxy-protected analogs of said compounds.

98. The compound of claim **83** which is a member selected from the group consisting of compounds of the formula



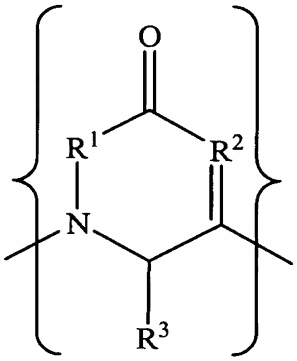
in which R^{23} is an amine protecting group and R^{24} is a member selected from the group consisting of an activated leaving group, OR^{25} where R^{25} is H or an oxygen-protecting group, SR^{26} where R^{26} is H or an alkyl or aryl group, or $NR(^{27})_2$ where each R^{27} is a member independently selected from the group consisting of H, alkyl, or aryl; and amine-protected analogs of said compounds.

99. The compound of claim **83** which is a member selected from the group consisting of compounds of the formula



amine-protected analogs of said compounds, carboxy-protected analogs of said compounds, amine-protected and carboxy-protected analogs of said compounds, and amine-protected and carboxy-activated analogs of said compounds.

100. A method for inhibiting the association of a selected peptide with other peptides, said method comprising contacting said selected peptide with a peptide analog defined as a peptide in which at least one amino acid, but less than all amino acids is replaced by an azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

R^3 is H or an amino acid side chain,

such that in at least one such azacyclohexenone group:

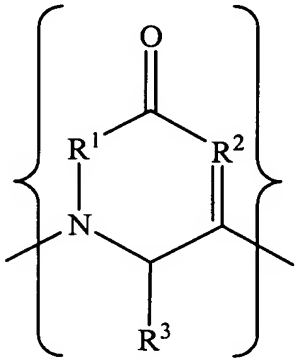
when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

to achieve a β-sheet like interaction between said selected peptide and said peptide analog.

101. A method for inhibiting the association of a selected peptide with other peptides, said method comprising contacting said selected peptide with a peptide analog defined as a peptide in which at least one amino acid, but less than all amino acids is replaced by an azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

to achieve a β-sheet like interaction between said selected peptide and said peptide analog.

102. The method of claim **101** in which R^1 is CH_2 and R^2 is N.

103. The method of claim **101** in which R^1 is NH and R^2 is CH.

104. The method of claim **101** in which R^1 is NH and R^2 is N.

105. The method of claim **101** in which R^1 is CH_2 and R^2 is CH.

106. The method of claim **101** in which said azacyclohexenone group is an L-stereoisomer relative to R^3 when R^3 is an amino acid side chain.

107. The method of claim **101** in which R^3 is a member selected from the group consisting of C_1-C_6 alkyl, C_1-C_6 alkyl interrupted by -O-, C_1-C_6 alkyl interrupted by -S-, hydroxy-(C_1-C_6 alkyl), carboxy-(C_1-C_6 alkyl), amino-(C_1-C_6 alkyl), guanidino-(C_1-C_6 alkyl), carbamoyl-(C_1-C_6 alkyl), mercapto-(C_1-C_6 alkyl), indolyl-(C_1-C_3 alkyl), phenyl-(C_1-C_3 alkyl), hydroxyphenyl-(C_1-C_6 alkyl), halophenyl-(C_1-C_6 alkyl), imidazolyl-(C_1-C_6 alkyl), phenyl, and sulfoximino-(C_1-C_6 alkyl).

108. The method of claim **101** in which R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy-(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino-(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

109. The method of claim **101** in which R^1 is CH_2, R^2 is N, and R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy-(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino-(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

110. The method of claim **101** in which said peptide analog is a peptide in which two or more non-adjacent amino acids are replaced by azacyclohexenone groups of said formula.

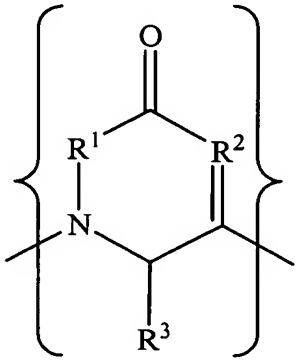
111. The method of claim **101** in which said peptide analog is a peptide in which, in at least a portion thereof, every second amino acid is replaced by an azacyclohexenone group of said formula, and the number of said azacyclohexenone groups in said peptide analog is two or more.

112. The method of claim **101** in which the total number of amino acids and azacyclohexenone groups in said peptide analog is from 3 to 200.

113. The method of claim **101** in which the total number of amino acids and azacyclohexenone groups in said peptide analog is from 4 to 20.

114. A method for inhibiting the association of a peptide with a double stranded nucleic acid, said method comprising contacting said peptide with a peptide analog

defined as a peptide in which at least one amino acid, but less than all amino acids, is replaced by an azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

R^3 is H or an amino acid side chain,

such that in at least one such azacyclohexenone group:

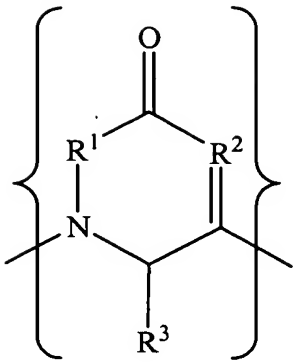
when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

to achieve a β-sheet-like interaction between said peptide and said peptide analog.

115. A method for inhibiting the association of a peptide with a double stranded nucleic acid, said method comprising contacting said peptide with a peptide analog defined as a peptide in which at least one amino acid, but less than all amino acids, is replaced by an azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

to achieve a β-sheet-like interaction between said peptide and said peptide analog.

116. The method of claim **115** in which R^1 is CH_2 and R^2 is N.

117. The method of claim **115** in which R^1 is NH and R^2 is CH.

118. The method of claim **115** in which R^1 is NH and R^2 is N.

119. The method of claim **115** in which R^1 is CH_2 and R^2 is CH.

120. The method of claim **115** in which said azacyclohexenone group is an L-stereoisomer relative to R^3 when R^3 is an amino acid side chain.

121. The method of claim **115** in which R^3 is a member selected from the group consisting of C_1-C_6 alkyl, C_1-C_6 alkyl interrupted by -O-, C_1-C_6 alkyl interrupted by -S-, hydroxy-(C_1-C_6 alkyl), carboxy-(C_1-C_6 alkyl), amino-(C_1-C_6 alkyl), guanidino-(C_1-C_6 alkyl), carbamoyl-(C_1-C_6 alkyl), mercapto-(C_1-C_6 alkyl), indolyl-(C_1-C_3 alkyl), phenyl-(C_1-C_3 alkyl), hydroxyphenyl-(C_1-C_6 alkyl), halophenyl-(C_1-C_6 alkyl), imidazolyl-(C_1-C_6 alkyl), phenyl, and sulfoximino-(C_1-C_6 alkyl).

122. The method of claim **115** in which R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy -(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino -(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

123. The method of claim **115** in which R^1 is CH_2, R^2 is N, and R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy -(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino -(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

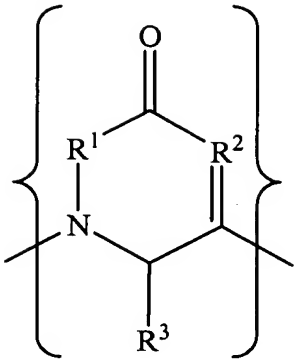
124. The method of claim **115** in which said peptide analog is a peptide in which two or more non-adjacent amino acids are replaced by azacyclohexenone groups of said formula.

125. The method of claim **115** in which said peptide analog is a peptide in which, in at least a portion thereof, every second amino acid is replaced by an azacyclohexenone group of said formula, and the number of said azacyclohexenone groups in said peptide analog is two or more.

126. The method of claim **115** in which the total number of amino acids and azacyclohexenone groups in said peptide analog is from 3 to 200.

127. The method of claim **115** in which the total number of amino acids and azacyclohexenone groups in said peptide analog is from 4 to 20.

128. A method for inhibiting the biological activity of a peptide, said method comprising contacting said peptide with a peptide analog defined as a peptide in which at least one amino acid, but less than all amino acids, is replaced by an azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

R^3 is H or an amino acid side chain,

such that in at least one such azacyclohexenone group:

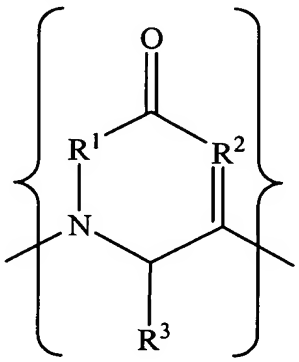
when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

to achieve a β-sheet-like interaction between said peptide and said peptide analog.

129. A method for inhibiting the biological activity of a peptide, said method comprising contacting said peptide with a peptide analog defined as a peptide in which at least one amino acid, but less than all amino acids, is replaced by an azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

to achieve a β-sheet-like interaction between said peptide and said peptide analog.

130. The method of claim **129** in which R^1 is CH_2 and R^2 is N.

131. The method of claim **129** in which R^1 is NH and R^2 is CH.

132. The method of claim **129** in which R^1 is NH and R^2 is N.

133. The method of claim **129** in which R^1 is CH_2 and R^2 is CH.

134. The method of claim **129** in which said azacyclohexenone group is an L-stereoisomer relative to R^3 when R^3 is an amino acid side chain.

135. The method of claim **129** in which R^3 is a member selected from the group consisting of C_1-C_6 alkyl, C_1-C_6 alkyl interrupted by -O-, C_1-C_6 alkyl interrupted by -S-, hydroxy -(C_1-C_6 alkyl), carboxy-(C_1-C_6 alkyl), amino-(C_1-C_6 alkyl), guanidino -(C_1-C_6 alkyl), carbamoyl-(C_1-C_6 alkyl), mercapto-(C_1-C_6 alkyl), indolyl-(C_1-C_3 alkyl), phenyl-(C_1-C_3 alkyl), hydroxyphenyl-(C_1-C_6 alkyl), halophenyl-(C_1-C_6 alkyl), imidazolyl-(C_1-C_6 alkyl), phenyl, and sulfoximino-(C_1-C_6 alkyl).

136. The method of claim **129** in which R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy -(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino -(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

137. The method of claim **129** in which R^1 is CH_2, R^2 is N, and R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy -(C_1-C_2 alkyl), carboxy-

3 (C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino -(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl),
4 mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and
5 hydroxyphenyl-(C_1-C_2 alkyl).

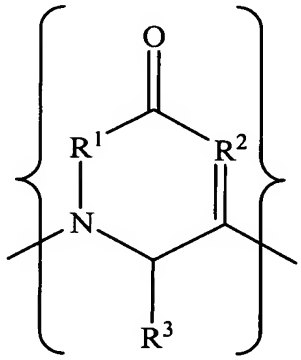
1 **138.** The method of claim **129** in which said peptide analog is a peptide in
2 which two ormore non-adjacent amino acids are replaced by azacyclohexenone groups of
3 said formula.

1 **139.** The method of claim **129** in which said peptide analog is a peptide in
2 which, in at least a portion thereof, every second amino acid is replaced by an
3 azacyclohexenone group of said formula, and the number of said azacyclohexenone groups in
4 said peptide analog is two or more.

1 **140.** The method of claim **129** in which the total number of amino acids and
2 azacyclohexenone groups in said peptide analog is from 3 to 200.

1 **141.** The method of claim **129** in which the total number of amino acids and
2 azacyclohexenone groups in said peptide analog is from 4 to 20.

1 **142.** A method for increasing the tendency of a target peptide or a portion of
2 a target peptide to assume a β-strand conformation, said method comprising contacting said
3 target peptide with a peptide analog defined as a peptide in which at least one amino acid, but
4 less than all amino acids, is replaced by an azacyclohexenone group having the formula



5
6 in which:
7 R^1 is CH_2 or NH,
8 R^2 is CH or N, and
9 R^3 is H or an amino acid side chain,
10 such that in at least one such azacyclohexenone group:

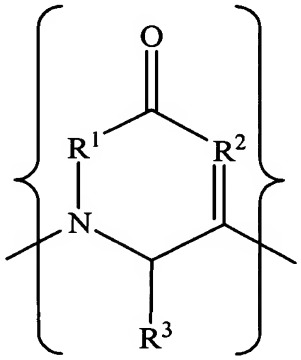
when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

to achieve a β-sheet-like interaction between said peptide and said peptide analog.

143. A method for increasing the tendency of a target peptide or a portion of a target peptide to assume a β-strand conformation, said method comprising contacting said target peptide with a peptide analog defined as a peptide in which at least one amino acid, but less than all amino acids, is replaced by an azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

to achieve a β-sheet-like interaction between said peptide and said peptide analog.

144. The method of claim **143** in which R^1 is CH_2 and R^2 is N.

145. The method of claim **143** in which R^1 is NH and R^2 is CH.

146. The method of claim **143** in which R^1 is NH and R^2 is N.

147. The method of claim **143** in which R^1 is CH_2 and R^2 is CH.

148. The method of claim **143** in which said azacyclohexenone group is an L-stereoisomer relative to R^3 when R^3 is an amino acid side chain.

149. The method of claim **143** in which R^3 is a member selected from the group consisting of C_1-C_6 alkyl, C_1-C_6 alkyl interrupted by -O-, C_1-C_6 alkyl interrupted by -S-, hydroxy-(C_1-C_6 alkyl), carboxy-(C_1-C_6 alkyl), amino-(C_1-C_6 alkyl), guanidino-(C_1-C_6 alkyl), carbamoyl-(C_1-C_6 alkyl), mercapto-(C_1-C_6 alkyl), indolyl-(C_1-C_3 alkyl), phenyl-(C_1-C_3 alkyl), hydroxyphenyl-(C_1-C_6 alkyl), halophenyl-(C_1-C_6 alkyl), imidazolyl-(C_1-C_6 alkyl), phenyl, and sulfoximino-(C_1-C_6 alkyl).

150. The method of claim **143** in which R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy -(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino -(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

151. The method of claim **143** in which R^1 is CH_2, R^2 is N, and R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy -(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino -(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

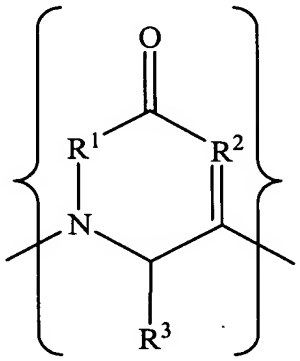
152. The method of claim **143** in which said peptide analog is a peptide in which two ormore non-adjacent amino acids are replaced by azacyclohexenone groups of said formula.

153. The method of claim **143** in which said peptide analog is a peptide in which, in at least a portion thereof, every second amino acid is replaced by an azacyclohexenone group of said formula, and the number of said azacyclohexenone groups in said peptide analog is two or more.

154. The method of claim **143** in which the total number of amino acids and azacyclohexenone groups in said peptide analog is from 3 to 200.

155. The method of claim **143** in which the total number of amino acids and azacyclohexenone groups in said peptide analog is from 4 to 20.

156. A method for extracting a target peptide having a selected amino acid sequence from a mixture of peptides, said method comprising contacting said mixture with a capture peptide that is covalently bonded to a solid support and associates with said amino acid sequence in a β-sheet interaction, said capture peptide comprising amino acids and at least one azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

R^3 is H or an amino acid side chain,

such that in at least one such azacyclohexenone group:

when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

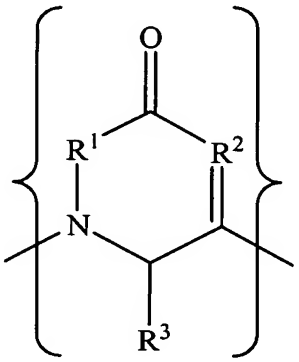
when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

to achieve a β-sheet-like interaction between said target peptide and said capture analog.

157. A method for extracting a target peptide having a selected amino acid sequence from a mixture of peptides, said method comprising contacting said mixture with a

capture peptide that is covalently bonded to a solid support and associates with said amino acid sequence in a β-sheet interaction, said capture peptide comprising amino acids and at least one azacyclohexenone group having the formula



in which:

R^1 is CH_2 or NH,

R^2 is CH or N, and

when R^1 is CH_2 and R^2 is CH, R^3 is an amino acid side chain, and

when either R^1 is NH, or R^2 is N, or R^1 is NH and R^2 is N, R^3 is H or an amino acid side chain,

and when said peptide analog contains two or more azacyclohexenone groups of said formula, R^1, R^2, and R^3 of any one azacyclohexenone group in said peptide analog are either the same as or different from R^1, R^2, and R^3 of any other azacyclohexenone group in said peptide analog,

to achieve a β-sheet-like interaction between said target peptide and said capture analog.

158. The method of claim **157** in which R^1 is CH_2 and R^2 is N.

159. The method of claim **157** in which R^1 is NH and R^2 is CH.

160. The method of claim **157** in which R^1 is NH and R^2 is N.

161. The method of claim **157** in which R^1 is CH_2 and R^2 is CH.

162. The method of claim **157** in which said azacyclohexenone group is an L-stereoisomer relative to R^3 when R^3 is an amino acid side chain.

163. The method of claim **157** in which R^3 is a member selected from the group consisting of C_1-C_6 alkyl, C_1-C_6 alkyl interrupted by -O-, C_1-C_6 alkyl interrupted by -S-, hydroxy-(C_1-C_6 alkyl), carboxy-(C_1-C_6 alkyl), amino-(C_1-C_6 alkyl), guanidino-(C_1-C_6

alkyl), carbamoyl-(C_1-C_6 alkyl), mercapto-(C_1-C_6 alkyl), indolyl-(C_1-C_3 alkyl), phenyl-(C_1-C_3 alkyl), hydroxyphenyl-(C_1-C_6 alkyl), halophenyl-(C_1-C_6 alkyl), imidazolyl-(C_1-C_6 alkyl), phenyl, and sulfoximino-(C_1-C_6 alkyl).

164. The method of claim **157** in which R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy-(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino-(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

165. The method of claim **157** in which R^1 is CH_2, R^2 is N, and R^3 is a member selected from the group consisting of C_1-C_4 alkyl, hydroxy-(C_1-C_2 alkyl), carboxy-(C_1-C_2 alkyl), amino-(C_3-C_5 alkyl), guanidino-(C_2-C_4 alkyl), carbamoyl-(C_1-C_2 alkyl), mercapto-(C_1-C_2 alkyl), methylthio-(C_1-C_3 alkyl), indolylmethyl, phenyl-(C_1-C_2 alkyl), and hydroxyphenyl-(C_1-C_2 alkyl).

166. The method of claim **157** in which said capture peptide is a peptide in which two or more non-adjacent amino acids are replaced by azacyclohexenone groups of said formula.

167. The method of claim **157** in which said capture peptide is a peptide in which, in at least a portion thereof, every second amino acid is replaced by an azacyclohexenone group of said formula, and the number of said azacyclohexenone groups in said peptide analog is two or more.

168. The method of claim **157** in which the total number of amino acids and azacyclohexenone groups in said capture peptide is from 3 to 200.

169. The method of claim **157** in which the total number of amino acids and azacyclohexenone groups in said capture peptide is from 4 to 20.